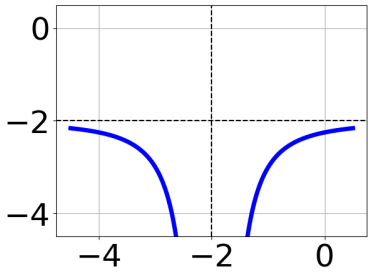
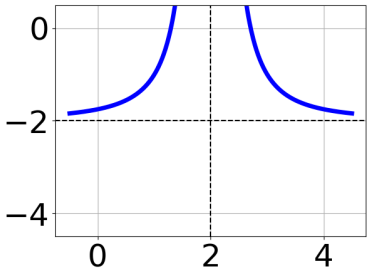
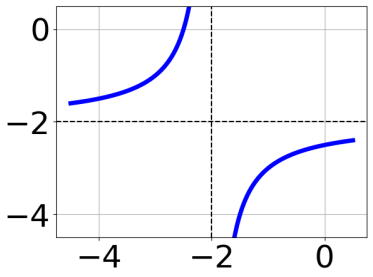
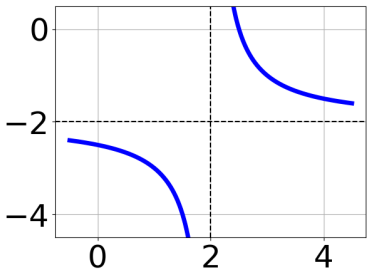
1. Choose the graph of the equation below.

$$f(x) = \frac{-1}{x+2} - 2$$

A. 

C. 

B. 

D. 

E. None of the above.

---

2. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{63}{54x+27} + 1 = \frac{63}{54x+27}$$

A. $x \in [-0.5, 0.5]$

B. $x_1 \in [-1.5, 0.2]$ and $x_2 \in [0.3, 1.4]$

C. $x_1 \in [-1.5, 0.2]$ and $x_2 \in [-1.4, 0.1]$

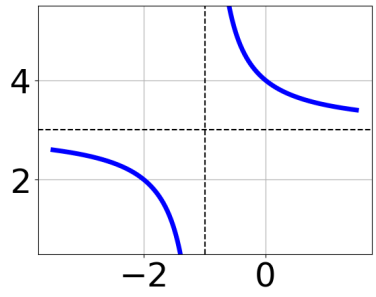
D. All solutions lead to invalid or complex values in the equation.

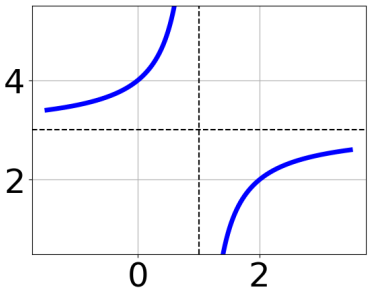
E. $x \in [0.3, 0.8]$

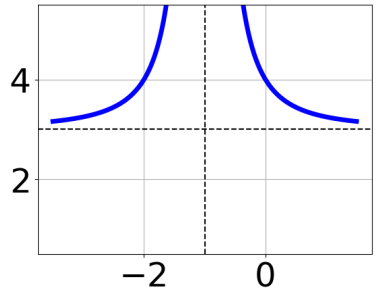
---

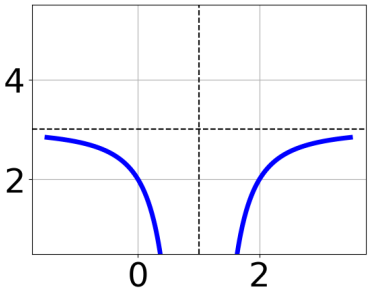
3. Choose the graph of the equation below.

$$f(x) = \frac{1}{(x-1)^2} + 3$$

A.


C.


B.


D.


E. None of the above.

---

4. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-6}{-6x-4} + -8 = \frac{8}{48x+32}$$

A. $x \in [-2.56, 1.44]$

B. $x_1 \in [-1.3, 0.4]$ and $x_2 \in [0.77, 1.77]$

C. All solutions lead to invalid or complex values in the equation.

D. $x_1 \in [-1.3, 0.4]$ and $x_2 \in [-1.38, 0.62]$

E. $x \in [0.2, 1]$

---

5. Determine the domain of the function below.

$$f(x) = \frac{6}{15x^2 - 8x - 16}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-20, -18]$ and $b \in [10, 15]$

B. All Real numbers except $x = a$, where $a \in [-0.8, 1.2]$

C. All Real numbers except $x = a$, where $a \in [-20, -18]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-0.8, 1.2]$ and $b \in [0.33, 5.33]$

E. All Real numbers.

---

6. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-2x}{6x-7} + \frac{-3x^2}{24x^2+8x-42} = \frac{-6}{4x+6}$$

A. All solutions lead to invalid or complex values in the equation.

B. $x_1 \in [3.5, 4.4]$ and $x_2 \in [-1.22, 3.78]$

C. $x_1 \in [0.1, 1.4]$ and $x_2 \in [-6.5, 0.5]$

D. $x \in [-3.7, 0.3]$

E. $x \in [0.1, 1.4]$

---

7. Determine the domain of the function below.

$$f(x) = \frac{5}{18x^2+15x-25}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-17, -13]$ and $b \in [29, 32]$

B. All Real numbers.

C. All Real numbers except $x = a$, where $a \in [-3.67, -0.67]$

D. All Real numbers except $x = a$, where $a \in [-17, -13]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-3.67, -0.67]$ and $b \in [0.83, 3.83]$

---

8. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-3x}{-2x+6} + \frac{-2x^2}{12x^2-48x+36} = \frac{5}{-6x+6}$$

A. $x \in [1.34, 1.87]$

B. $x_1 \in [-1.15, -0.96]$ and $x_2 \in [3, 6]$

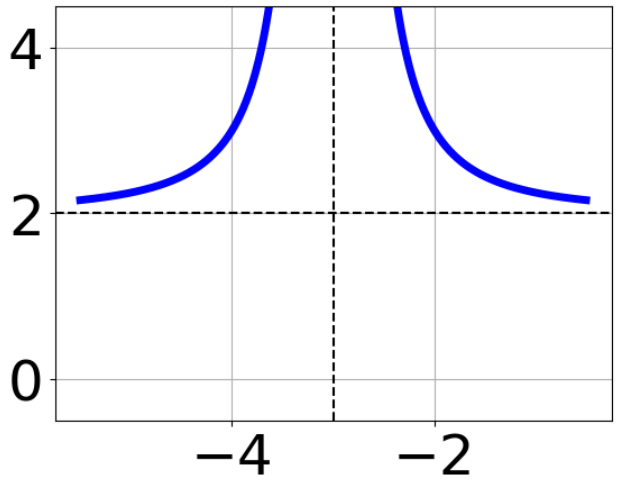
C. $x \in [0.46, 1.62]$

D. All solutions lead to invalid or complex values in the equation.

E. $x_1 \in [-1.15, -0.96]$ and $x_2 \in [-2.36, 2.64]$

---

9. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{(x+3)^2} + 2$

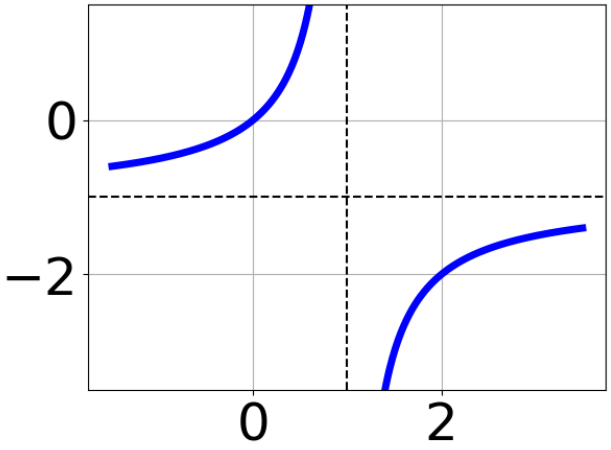
B. $f(x) = \dfrac{-1}{x+3} + 2$

C. $f(x) = \dfrac{1}{(x-3)^2} + 2$

D. $f(x) = \dfrac{1}{x-3} + 2$

E. None of the above

10. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{1}{x+1} - 1$

B. $f(x) = \dfrac{-1}{(x-1)^2} - 1$

C. $f(x) = \dfrac{-1}{x-1} - 1$

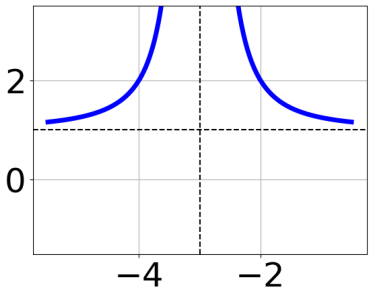
D. $f(x) = \dfrac{1}{(x+1)^2} - 1$

E. None of the above

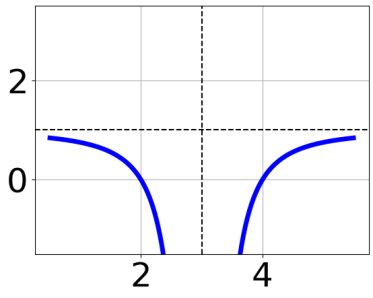
11. Choose the graph of the equation below.

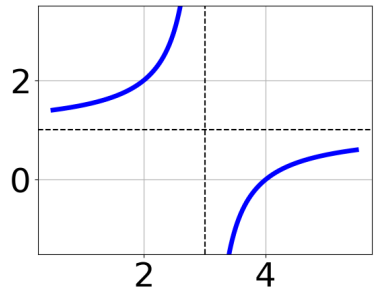
$$f(x) = \frac{-1}{x-3} + 1$$

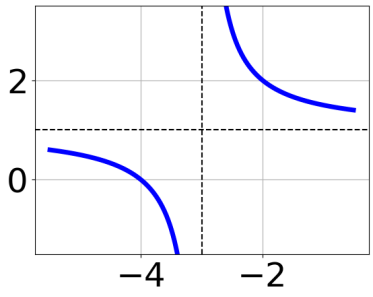
A.



B.



C. 

D. 

E. None of the above.

---

12. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-3}{-9x+9}+2=\frac{9}{81x-81}$$

A. All solutions lead to invalid or complex values in the equation.

B. $x \in [0.89, 1.89]$

C. $x_1 \in [-0.8, 0.5]$ and $x_2 \in [-1.11, 2.89]$

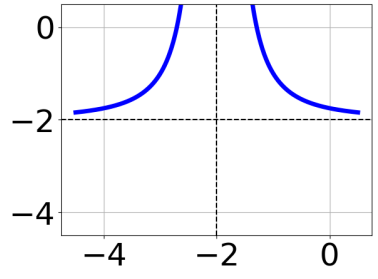
D. $x \in [-2.8, -0.5]$

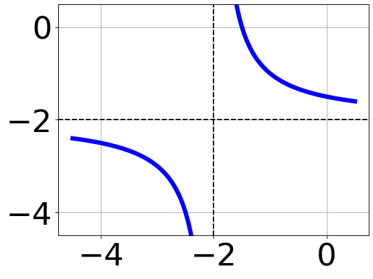
E. $x_1 \in [-2.8, -0.5]$ and $x_2 \in [-1.11, 2.89]$

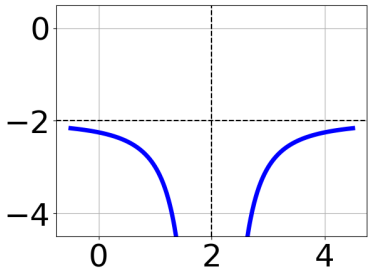
---

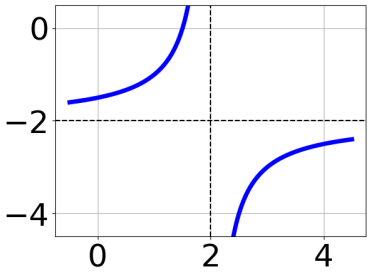
13. Choose the graph of the equation below.

$$f(x)=\frac{-1}{x+2}+2$$

A. 

B. 

C. 

D. 

E. None of the above.

---

14. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-45}{-72x+18}+1=\frac{-45}{-72x+18}$$

A. $x_1 \in [-0.7, -0.1]$ and $x_2 \in [0.25, 4.25]$

B. $x \in [-0.7, -0.1]$

C. All solutions lead to invalid or complex values in the equation.

D. $x \in [-0.75, 1.25]$

E. $x_1 \in [0.1, 0.9]$ and $x_2 \in [0.25, 4.25]$

---

15. Determine the domain of the function below.

$$f(x)=\frac{4}{9x^2-21x+12}$$

A. All Real numbers except $x = a$, where $a \in [0.73, 1.27]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [0.73, 1.27]$ and $b \in [1.07, 1.91]$

C. All Real numbers except $x = a$, where $a \in [8.88, 9.19]$

D. All Real numbers.

E. All Real numbers except $x = a$ and $x = b$, where $a \in [8.88, 9.19]$ and $b \in [11.76, 12.03]$

16. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-6x}{3x+6} + \frac{-5x^2}{21x^2+57x+30} = \frac{-5}{7x+5}$$

A. $x_1 \in [0.48, 0.9]$ and $x_2 \in [-1.97, 4.03]$

B. All solutions lead to invalid or complex values in the equation.

C. $x \in [-1.35, -0.83]$

D. $x \in [-0.88, -0.71]$

E. $x_1 \in [0.48, 0.9]$ and $x_2 \in [-5, -1]$

17. Determine the domain of the function below.

$$f(x) = \frac{4}{18x^2+21x-15}$$

A. All Real numbers.

B. All Real numbers except $x = a,$ where $a \in [-4.67, -0.67]$

C. All Real numbers except $x = a$ and $x = b,$ where $a \in [-4.67, -0.67]$ and $b \in [-0.5, 1.5]$

D. All Real numbers except $x = a,$ where $a \in [-17, -12]$

E. All Real numbers except $x = a$ and $x = b,$ where $a \in [-17, -12]$ and $b \in [15, 20]$

18. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-6x}{-6x-4} + \frac{-7x^2}{-30x^2-2x+12} = \frac{3}{5x-3}$$

A. All solutions lead to invalid or complex values in the equation.

B. $x \in [1.09, 1.68]$

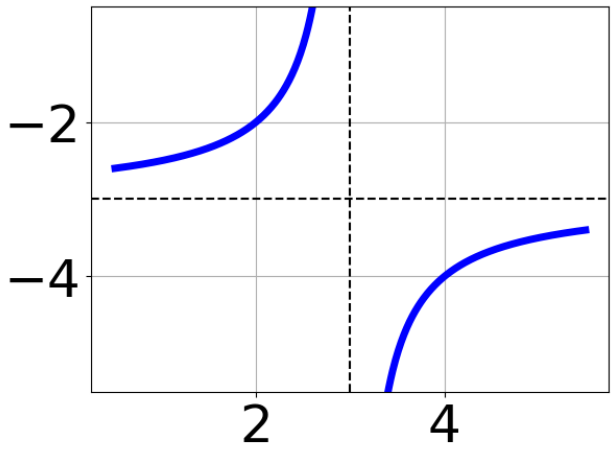
C. $x_1 \in [-1.53, -0.16]$ and $x_2 \in [-1.8, -0.3]$

D. $x_1 \in [-1.53, -0.16]$ and $x_2 \in [0.7, 1.5]$

E. $x \in [0.46, 1.06]$

---

19. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{1}{(x+3)^2} - 3$

B. $f(x) = \dfrac{1}{x+3} - 3$

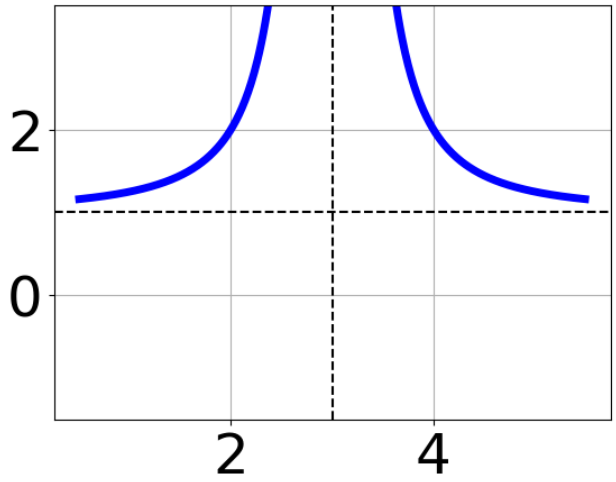
C. $f(x) = \dfrac{-1}{x-3} - 3$

D. $f(x) = \dfrac{-1}{(x-3)^2} - 3$

E. None of the above

---

20. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{1}{x-3} + 1$

B. $f(x) = \dfrac{-1}{(x+3)^2} + 1$

C. $f(x) = \dfrac{-1}{x+3} + 1$

D. $f(x) = \dfrac{1}{(x-3)^2} + 1$

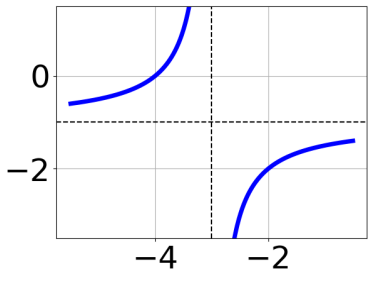
E. None of the above

---

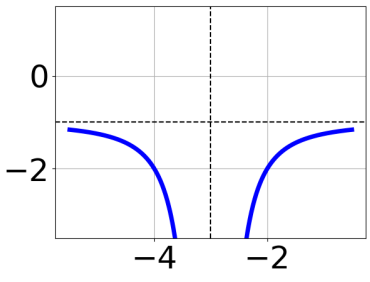
21. Choose the graph of the equation below.

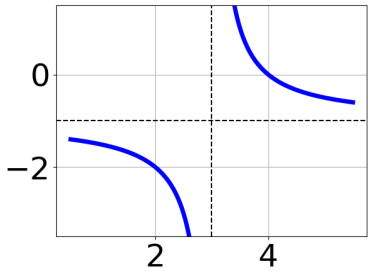
$$f(x) = \frac{-1}{x+3} - 1$$

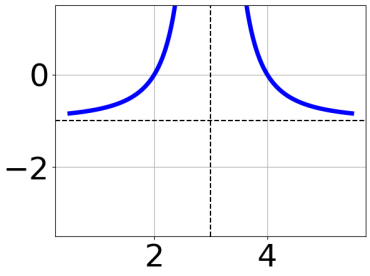
A.



B.



C. 

D. 

E. None of the above.

---

22. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{56}{70x-70}+1=\frac{56}{70x-70}$$

A. $x \in [-2, 0]$

B. All solutions lead to invalid or complex values in the equation.

C. $x_1 \in [-2, 0]$ and $x_2 \in [-1, 3]$

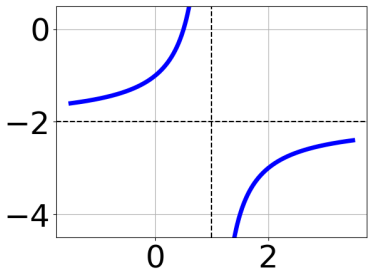
D. $x_1 \in [0, 2]$ and $x_2 \in [-1, 3]$

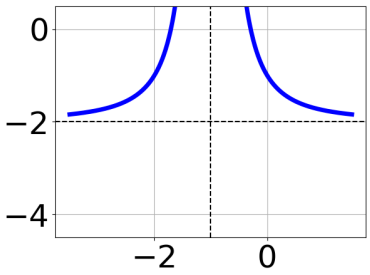
E. $x \in [1.0, 2.0]$

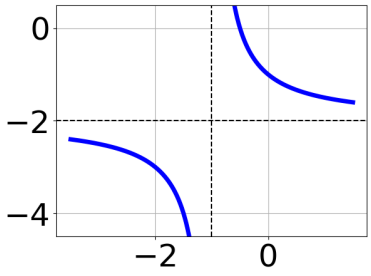
---

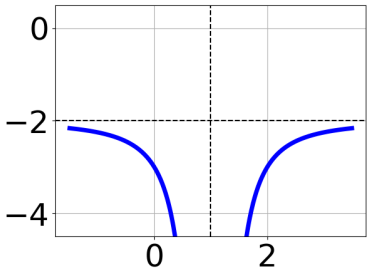
23. Choose the graph of the equation below.

$$f(x)=\frac{1}{x+1}-2$$

A. 

B. 

C. 

D. 

E. None of the above.

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24. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{2}{4x+4} + -8 = \frac{5}{24x+24}$$

A. $x_1 \in [-1.09, -0.57]$ and $x_2 \in [-0.96, 5.04]$

B. All solutions lead to invalid or complex values in the equation.

C. $x_1 \in [-1.15, -1.01]$ and $x_2 \in [-1.96, 0.04]$

D. $x \in [-1.96, 0.04]$

E. $x \in [0.38, 1.12]$

---

25. Determine the domain of the function below.

$$f(x) = \frac{6}{30x^2 - 39x + 12}$$

A. All Real numbers except $x = a$, where $a \in [17.92, 18.17]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [0.29, 0.5]$ and $b \in [0.56, 0.94]$

C. All Real numbers except $x = a$, where $a \in [0.29, 0.5]$

D. All Real numbers.

E. All Real numbers except $x = a$ and $x = b$, where $a \in [17.92, 18.17]$ and $b \in [19.87, 20.04]$

26. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{2x}{-5x-7} + \frac{-6x^2}{35x^2+84x+49} = \frac{-3}{-7x-7}$$

A. All solutions lead to invalid or complex values in the equation.

B. $x_1 \in [-1.32, -0.99]$ and $x_2 \in [-3.06, -1.77]$

C. $x_1 \in [-1.85, -1.34]$ and $x_2 \in [-2.03, -0.18]$

D. $x \in [-1.85, -1.34]$

E. $x \in [-1.32, -0.99]$

27. Determine the domain of the function below.

$$f(x) = \frac{5}{12x^2 - 25x + 12}$$

A. All Real numbers except $x = a$ and $x = b$, where $a \in [-0.52, 0.88]$ and $b \in [0.86, 1.81]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [10.75, 13.23]$ and $b \in [10.75, 13.23]$

C. All Real numbers.

D. All Real numbers except $x = a$, where $a \in [10.75, 13.23]$

E. All Real numbers except $x = a$, where $a \in [-0.52, 0.88]$

28. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-5x}{-5x-5} + \frac{-3x^2}{-10x^2+25x+35} = \frac{-7}{2x-7}$$

A. $x_1 \in [-2.01, -0.31]$ and $x_2 \in [1.5, 5.5]$

B. $x \in [3.05, 3.68]$

C. All solutions lead to invalid or complex values in the equation.

D. $x \in [-2.01, -0.31]$

E. $x_1 \in [1.91, 2.47]$ and $x_2 \in [-3.24, -0.24]$

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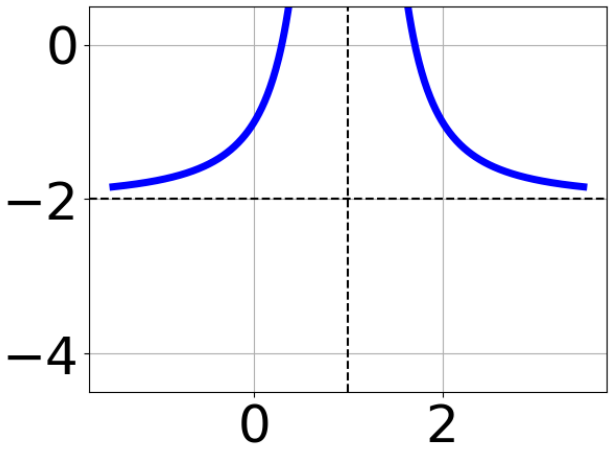
29. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{x+1} + 2$

B. $f(x) = \dfrac{1}{x-1} + 2$

C. $f(x) = \dfrac{1}{(x-1)^2} + 2$

D. $f(x) = \dfrac{-1}{(x+1)^2} + 2$

E. None of the above

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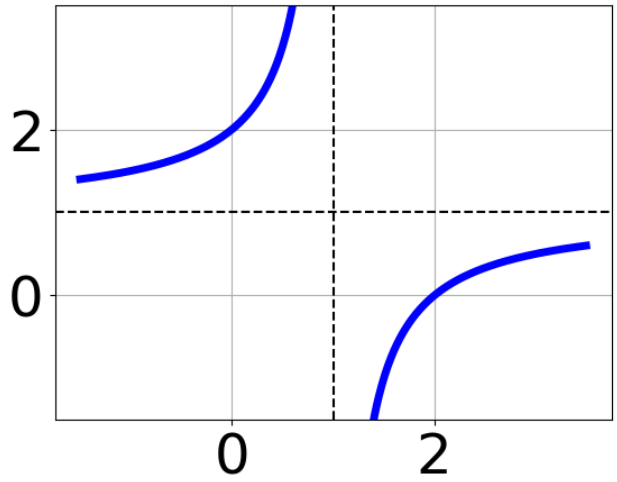
30. Choose the equation of the function graphed below.



A. $f(x) = \dfrac{-1}{x-1} + 1$

B. $f(x) = \dfrac{-1}{(x-1)^2} + 1$

C. $f(x) = \dfrac{1}{x+1} + 1$

D. $f(x) = \dfrac{1}{(x+1)^2} + 1$

E. None of the above
